

Opportunities for participatory data collection	
Additional information	
References	

24.18 Number of new jobs in green sector

Project Name: PHUSICOS (Grant Agreement no. 776681) and UNaLab (Grant Agreement no. 730052)

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Number of new jobs in green sector	New Economic Opportunities and Green Jobs
Description and justification	<p>'Green jobs' in areas directly connected to the environment such as resource conservation, waste management, water and green space management, and air quality can support economic growth and development. Some NBS projects may generate new jobs and new economic opportunities (Raymond et al., 2017; Byrd et al., 2017; European Commission, 2013). Large-scale and/or long-term NBS projects are likely to create new jobs through the development of activities related to enjoyment of the natural environment (e.g., outdoor activity instruction and guiding, bike and other outdoor equipment rental and/or repair, nature education, etc.).</p> <p>The United Nations Environment Programme (UNEP), International Labour Organization (ILO), International Organisation of Employers (IOE), and International Trade Union Confederation (ITUC) (2008, pp. 3) define green jobs as "work in agricultural, manufacturing, research and development (R&D), administrative and service activities</p>

	that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution." The employing company or organisation can either be in a 'green' sector (e.g., green infrastructure design), or in a conventional sector (e.g., engineering services) but be making genuine and substantial efforts to green its operations.
Definition	Total number or per cent increase in the (new) jobs related to environmental service activities that contribute substantially to preserving or restoring environmental quality
Strengths and weaknesses	+ Easy to measure - Requires extensive processing of input data if not already available
Measurement procedure and tool	<p>This Indicator will be equal to 0 in the baseline scenario (i.e., prior to NBS actions) and will be assessed in a Long Term Scenario, using data made available after NBS have been implemented to determine the number of new jobs created in the green sector. The number of jobs, or number of new jobs, in the green sector can be counted or estimated for a given municipality based on business registrations and/or administrative documents as follows.</p> <ul style="list-style-type: none"> • The total number of new jobs in the green sector is a simple count and is expressed as a number. • The per cent increase in green jobs is calculated as: $\left(\frac{\text{Number of (new) green jobs}}{\text{Total number of (new) jobs}} \right) \times 100$ <p>Alternatively, this indicator may be qualitatively estimated in the Design Scenario, using a probabilistic (e.g., Likert) scale prior to NBS implementation, e.g., during the NBS co-creation phase. In the Design Scenario, a five-point Likert scale with categories "Very Poor", "Poor", "Average", "Good", and "Very Good", can be used to assess the potential realisation of new jobs in the green sector within the study area.</p>
Scale of measurement	District to regional scale
Data source	
Required data	Data about the number of green jobs and total number of jobs from business registrations and/or administrative

	documents; National Statistical Institute; Chamber of Commerce.
Data input type	Quantitative
Data collection frequency	Before and after NBS implementation. Recommended annual assessment.
Level of expertise required	Low to moderate
Synergies with other indicators	Synergies with the indicator group <i>Economic activity & Green Jobs</i> indicators
Connection with SDGs	SDG 8 Decent work and economic growth, and SDG 9 Industry, innovation and infrastructure
Opportunities for participatory data collection	No opportunities identified
Additional information	
References	<p>Byrd C., Andersson E., Kronenberg J., Hansen R., Buijs A. (2017). Understanding and Promoting the Values of Urban Green Infrastructure: a learning module. GREEN SURGE project Deliverable 4.5, University of Copenhagen, Copenhagen, Denmark</p> <p>European Commission (2013). Rural Development in the European Union - Statistical and economic information – 2013. European Union, 2013. https://ec.europa.eu/agriculture/statistics/rural-development/2013_en</p> <p>Madureira, H., Nunes, F., Oliveira, J. V., Cormier, L., & Madureira, T. (2015). Urban residents' beliefs concerning green space benefits in four cities in France and Portugal. <i>Urban Forestry & Urban Greening</i>, 14(1), 56-64.</p> <p>Raymond C.M., Berry P., Breil M., Nita M.R., Kabisch N., de Bel M., Enzi V., Frantzeskak N., Geneletti D., Cardinaletti M., Lovinger L., Basnou C., Monteiro A., Robrecht H., Sgrigna G., Munari L., Calfapietra C. (2017). An Impact Evaluation Framework to Support Planning and Evaluation of Nature-based Solutions Projects. Report prepared by the EKLIPSE Expert Working Group on Nature-based Solutions to Promote Climate Resilience in Urban Areas. Centre for Ecology & Hydrology, Wallingford, United Kingdom</p> <p>Tamosiunas, A., Grazuleviciene, R., Luksiene, D., Dedele, A., Reklaitiene, R., Baceviciene, M., ... Niewenhuijsen, M.J. (2014). Accessibility and use of urban green spaces, and cardiovascular health: findings from a Kaunas cohort study. <i>Environmental Health</i>, 13(1), 20.</p> <p>Tyler, P., Warnock, C., Provins, A., & Lanz, B. (2013). Valuing the benefits of urban regeneration. <i>Urban Studies</i>, 50, 169-190.</p>

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24.19 Jobs created in NBS construction and maintenance

Project Name: PHUSICOS (Grant Agreement no. 776681)

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Jobs Created In NBS Construction and Maintenance	New Economic Opportunities and Green Jobs
Description and justification	Some NBS projects could have a potential to generate new jobs and new economic opportunities (Raymond et al., 2017; Byrd et al., 2017; European Commission, 2013). Literature reports many examples (OPPLA Case Studies). In detail, extended NBS projects are likely to create new jobs in the construction and maintenance of these interventions.
Definition	This Indicator will be equal to 0 in the Baseline Scenario and could be inferred in the Design Scenario by the different executive projects to be evaluated (if they contain an esteem of needs regarding number of workers to be employed). Otherwise it could be measured, through a probabilistic scale and inferred by statistical data in the Long-Term scenario.
Strengths and weaknesses	Collecting the data necessary to assess the indicator could be time and money consuming.
Measurement procedure and tool	In the Design Scenario, the indicator will be assessed consulting executive projects reports and counting the number of workers to be employed. If executive projects reports do not provide this esteem, a five-point Likert item with categories "Very Poor", "Poor", "Average", "Good", and "Very Good", could be adopted to assess the likelihood of occurring the creation of new jobs